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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,889	10/19/2001	Nobuyuki Sekikawa	492322002200	7319

7590 10/23/2002
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EXAMINER

VU, DAVID

ART UNIT	PAPER NUMBER
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2818

DATE MAILED: 10/23/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,889

Applicant(s)

SEKIKAWA ET AL.

Examiner

DAVID VU

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 6-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/ Restriction

1. Application's election without traverse of Group I (Claims 1-5) in Paper No.5 is acknowledge.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 3-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Koga (US 5,936,265).

Koga, in related text (Col. 17, Line 57-Col. 18, Line 22 and Col. 24, Lines 16-23) and figures (Figs. 23a-B) disclose a semiconductor device comprising: a resistance layer 706 formed on a semiconductor substrate of a first conductivity type and of a second conductivity type, one end of said resistance layer 706 being adapted to have a first voltage (V_{ss}) applied thereto, another end of said resistance layer 706 being adapted to have a second voltage (V_{dd}) applied thereto; an oxide film 704 formed on the resistance layer 706; and a resistance bias electrode layer comprising a silicon layer 705 formed on the oxide film 704; wherein the device is configured so that voltage dependence of a resistance of the resistance layer is reduced by adjusting the voltage applied to the resistance bias electrode layer.

3. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Choi et al. (US 5,686,754).

Choi et al., in related text (Col. 2, Line 53-Col. 3, Line 51 and Col. 4, Lines 8-55) and figures (Figs. 1-3) disclose a semiconductor device comprising: a resistance layer formed on a semiconductor substrate 20 of a first conductivity type and of a second conductivity type, one end of said resistance layer being adapted to have a first voltage (600V) applied thereto, another end of said resistance layer being adapted to have a second voltage (600V) applied thereto; an oxide film 80 formed on the resistance layer; and a resistance bias electrode layer comprising a silicon layer 7/7a formed on the oxide film 80; wherein the device is configured so that voltage dependence of a resistance of the resistance layer is reduced by adjusting the voltage applied to the resistance bias electrode layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choi et al.,(US 5,686,754).

Choi et al., disclose all claimed subject matter, but fails to expressly disclose the ratio of the voltage applied to the pair of the electrode pad layers to the voltage applied to the resistance bias layer is 0.5-0.6.

Choi, in related text, (Col. 2, Lines. 53-65) disclose the ratio of the voltage applied to the pair of the electrode pad layers to the voltage applied to a resistance bias electrode layer is 0.98 (600V/615V). It would have been obvious to one with ordinary skill in the art at the time of the invention to judiciously adjust and control the ratio of the voltage applied to the pair of the electrode pad layers to the voltage applied to the resistance bias layer through routine experimentation and optimization to achieve optimum benefits (see MPEP 2144.05) and it would not yield any unexpected results.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Vu whose telephone number is (703) 305-0391. The examiner can normally be reached on Monday-Friday from 8:00am to 5:00pm. If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms., can be reached on (703) 308-4910.

DV

David Vu


HOAI HO
PRIMARY EXAMINER